- Crosspoint switch – 32 inputs to up to 16 outputs
- 32:16 Single-Head KVM switch
- 16:8 Dual-Head KVM switch
- 8:4 Quad-Head KVM switch
- Supports DVI-D instant switching (+ USB keyboard/mouse)
- Supports USB 2.0 switching
- Supports VGA input
- For distances up to 140 m @Cat X, 400 m @multi-mode 50µ, 10 km @ single-mode 9µ

Draco™ major

DVI-D

- CROSSPOINT SWITCH
- SINGLE-HEAD KVM SWITCH
- DUAL-HEAD KVM SWITCH
- QUAD-HEAD KVM SWITCH

Technological description

Draco™ major

Input Interface	Cat X or Fiber
Output Interface	Cat X or Fiber
Resolution	DVI-D, max. 1920x1200@60Hz
Options:	USB keyboard/mouse (USB HID), USB 2.0 serial/audio
Distances:	each Cat X connection up to 140 m each multi-mode connection up to 400 m each single-mode connection up to 10 km
Control:	WEB Interface, FTP, Telnet, serial, USB, keyboard, IR-RC
Power Supply	90...240VAC internal PSU 150W – optional available with redundant PSU 2x150W
Sizes	440 x 85 x 443 mm 19" Housing 2 U

DVI-D Switch:

- Crosspoint
- Single-Head KVM
- Dual-Head KVM
- Quad-Head KVM

The Draco major switch sets a milestone in the world of matrix switches.

For the first time, the quality of DVI sources can be switched through a matrix switch. Highest resolutions of up to 1920x1200 (Dual Link up to 2560x2048 projected) in combination with long distances open up the multifaceted possibilities.

The device can be easily set to the various modes of operation.

Besides of the most popular operation mode KVM Switch, the device can also handle Dual-Head or Quad-Head applications.

In the operation mode ‚KVM Switch', the special feature ‚Partner Viewing', allows, to double the own screen content to one or more additional screens. Perfect, if you want to show your content additionally on a video-projector or if you want to make your screen available for your administrator. The feature ‚Follow- Me'- allows, that even when you switch to another CPU, the connected screens will follow.

One operation mode reproduces an often required function in Control Rooms: Several monitors can be assigned to a workplace. The CPUs displayed on these monitors can be easily selected from the list of available CPUs. With a short key you can switch fast and easily the keyboard/mouse to each monitor and control the attached CPU.

In the operation mode Crosspoint Switch, the Draco major allows applications in conference rooms or in Digital Signage applications.

In Educational Environments, an additional operation mode sets the system to a student/teacher configuration. The teacher can always switch to the monitor of each student for observation. In the configuration for up to 15 students, the teacher can additionally switch his screen content or this of any student to the other students. In the configuration for up to 31 students, he can switch his or the screen content of any student to a common screen (e.g. video projector).

In KVM switch mode the access is always done via the connected keyboard with a comfortable On Screen Display (OSD). Additionally it is possible to make the control access via serial interface or with network access. This allows, using this device as a matrix switch in combination with commercially available media control devices.

A User Management in up to 1000 levels allows a detailed right level for each console place, for each CPU and/or for each switch.

The OSD or Web Interface allows displaying the actual port connectivity, user connectivity… at any time.

The Administration of the system is regularly done by a console and a user with administrator rights or comfortable through the built-in Web Interface. Additionally the administration can be done via the equipped IR-remote control

The complete system, with all built-in boards and components can easily be upgraded with the most recent firmware version. To do this, you only have to upload via FTP the necessary Upgrade files into the device.

A Draco major Switch System is always configured like described below:

- At each signal source (CPU) a local unit is installed.
- Using Cat X or fiber cables (depending on device type) the connection to the Draco major unit is made.
- Optional, using Cat X or fiber cables (depending on device type) you can make the connection to a master Draco major.
- At each console (monitor) a remote unit is installed.
- Using Cat X or fiber cables (depending on device type) you can make the connection to the Draco major.

The Draco major switch uses identical boards for in and output. Because of this you get money savings in inventory costs and a higher availability.

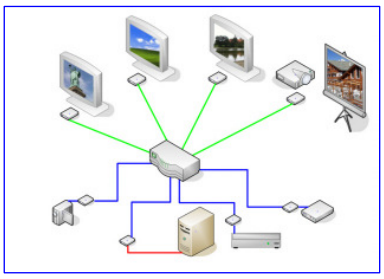
Highlights

- *DVI-D 1920x1200@60Hz/ up to 24Bit colors*
- *USB keyboard/mouse (depending on device)*
- *Optional available with USB 2.0, serial/audio*
- *Up to 16 independent users*
- *Up to 1024 connected CPUs*
- *140 m @ Cat X,*
  400 m @ multi-mode 50µ,
  200 m @ multi-mode 62,5µ,
  10 km @ single-mode 9µ
- *Power Supply 90...240VAC with internal PSU – optional available with redundant PSU*
- *E/A boards available for Cat X, multi-mode, single-mode or for user selectable assembly*
- *Online upgrade possible*
- *User management and access right management in up to 1000 levels*
- *Comfortable configuration and CPU naming*
- *Access via OSD (On Screen Display), via serial interface or graphical Web Interface*

Operating Modes:

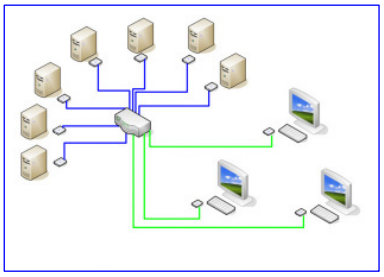
- *Crosspoint switch with up to 32 (1024) CPUs (graphic sources) and up to 16 monitors*
- *KVM switch:*
  Single-Head (1x Graphic),
  Dual-Head (2x Graphic) or Single-Head / USB2.0
  Quad-Head (4x Graphic) or Triple-Head / USB2.0
  Control room mode
- *In KVM mode: ‚Partner Viewing' with ‚Follow Me': The own screen content may be doubled to one or more additional screens. Perfect for presentations or administrator support. When switching to another CPU, the connected, additional monitors will follow unless they are released by the user.*
- *Teacher/Student mode for maximum 15 students in ‚Full Access' or. maximum 31 Students in 'Public Access'*

Operation Modes



Crosspoint Switch

Maximum system (without cascading): 32 Signal sources to 16 monitors or in reverse mode 16 sources to 32 monitors.
Assembly: At each of up to 32 DVI signal sources a local unit is installed. The crosspoint switch can be installed up to 10 km remotely from the local units (depending on device).
The incoming signals (DVI + optional serial/audio) can be switched to the output connectors. Here it is allowed, to distribute one input signal to several output connectors.
From these output connectors you can go to the (up to 10 km remotely located) display units. For this, at each display a remote unit is installed.
Switching between the signal sources is done via serial interface or via WEB Interface.



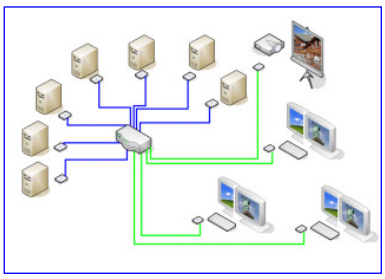
KVM Switch

Using the Draco major as a KVM switch allows multiple operation modes:

- 16 consoles at 32 CPUs for Single-Head access, 8 consoles at 16 CPUs for Dual-Head or 4 consoles at 8 CPUs for Quad-Head (in a homogeneous configuration)
- You can also have a system, where you mix Single-Head/ Dual-Head/ Quad-Head CPUs/ consoles. The maximum quantity of consoles/CPUs depends on your private configuration.

At each of up to 32 CPUs a local unit is installed. The KVM switch can be installed up to 10 km remotely from the local units (depending on device).

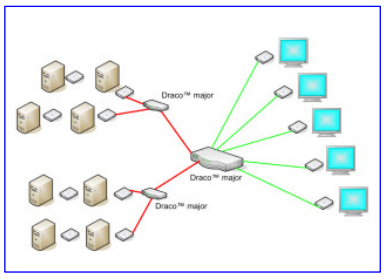
The incoming signals (DVI, keyboard/mouse + optional serial/audio) can be switched to the output connector. From these output connectors you can go to the (up to 10 km remotely located) consoles. For this, at each console a remote unit is installed.



Switching between the CPUs:

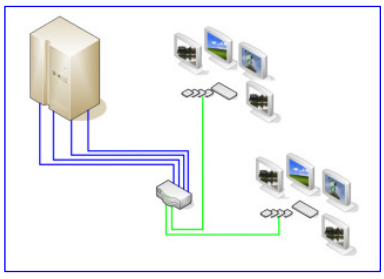
- via serial communication
- pressing a key sequence at the remotely attached keyboard (in KVM switch mode only)
- accessing a comfortable OSD (On Screen Display). It allows selecting the CPUs, user administration and other administrative functions.
- accessing via graphical WEB interface using an internet browser
- For complex switching scenarios, the device can also be switched via a commercially available media control device.

The special feature ‚Partner Viewing', allows, to double the own screen content to one or more additional screens. Perfect, if you want to show your content additionally on a video projector or if you want to make your screen available for your administrator. The feature ‚Follow Me'-mode allows, that even when you switch to another CPU, the connected screens will follow.



Optionally, instead of accessing a CPU, you can cascade a second KVM switch at each (CPU) Port. This allows to control up to 1024 CPUs with one monitor (Single-Head), 256 CPUs with two monitors (Dual-Head) or up to 64 CPUs (Quad-Head).

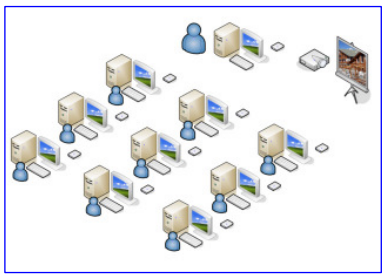
It is allowed, to make a cascaded configuration, where you stack several switches to raise the number of accessible CPUs. But please note, the number of connections between two switches limit the number of users with simultaneous access to the CPUs of the second stage (blocking access).



Control Room Mode

The control room mode is a special mode of the KVM switch mode. In the control room mode it's allowed, to attach several monitors (unlimited number, only limited by stage of expansion) to a single console. The CPU displayed on each monitor is freely selectable from the list of available CPUs, using the comfortable OSD.

Using a hotkey sequence, the user easily and fast can switch the keyboard/mouse to the CPU, attached to one of its related screens. Here he not necessarily needs to know the number of attached CPU. Now he can access and control the attached CPU. Also in this mode one (or more) screen(s) can be doubled to an additional screen (‚Partner Viewing').



Student/ Teacher System

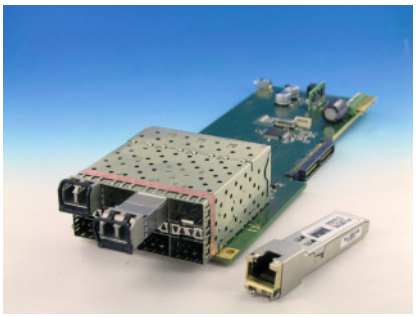
Two possible configurations:

a) Up to 15 students – each student's workplace and the teachers workplace is connected via Cat X duplex cable using a local + remote unit. Each CPU can be displayed on each workplace – all students and the teacher's workplace – also on all workplaces simultaneously. The teacher can observe each student.

b) Up to 31 students – each student's workplace and the teachers workplace is connected via Cat X simplex cable using a local unit. Each CPU can be displayed on a common monitor (e.g. video projector) – all students and the teachers workplace. The teacher can observe each student.

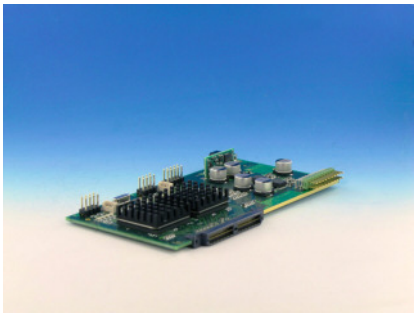
Boards and order notation

Cat X E/A board

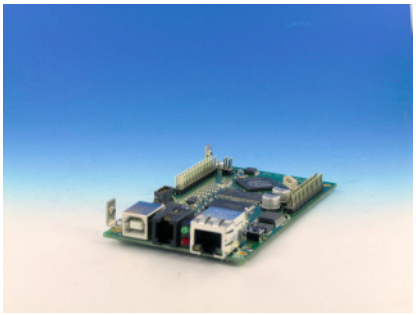


Fiber E/A board

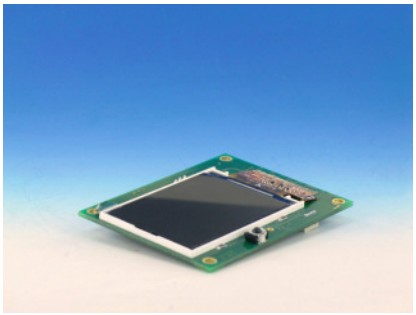
Cat X – KVM remote unit (example)



OSD board for 8 users



Control board with communication connectors



Display board

Product description	P/N
Draco major Switch devices Cat X	
Draco major, 8x User / 8x CPU	K474-U8/C8
Draco major, 8x User / 16x CPU	K474-U8/C16
Draco major, 8x User / 24x CPU	K474-U8/C24
Draco major, 8x User / 32x CPU	K474-U8/C32
Draco major, 16x User / 8x CPU	K474-U16/C8
Draco major, 16x User / 16x CPU	K474-U16/C16
Draco major, 16x User / 24x CPU	K474-U16/C24
Draco major, 16x User / 32x CPU	K474-U16/C32
Draco major Switch devices – free configuration	
Draco major, empty for free configuration	K474-UX/CX
Draco OSD board	474-OSD
Draco Display board	474-DIS
Draco Cat X E/A board	474-C8
Draco Fiber E/A board multi-mode	474-M8
Draco Fiber E/A board single-mode	474-S8
Draco Fiber E/A board empty, free configuration	474-X8
Cat X GBIC for use in Draco minor/major	459-1C
Multi-mode GBIC for use in Draco minor/major	459-1M
Single-mode GBIC for use in Draco minor/major	459-1S
Accessories (optional)	
19” RMK for 1x...4x Media+KVM Single-Head device	455-4G
19”- RMK for 1x...4x KVM Dual-Head device	455-8G
19"-p.s.u. to power up to 3 devices	455-PS
Mounting plate to mount by screws	455-1K
Draco upgrade to redundant power supply	474-RED

Product description	Local	Remote
Draco major Media devices (no keyboard/mouse)		
Draco- Media Unit w/o audio/serial, **Cat X**	L459-0E	R459-0E
Draco- Media Unit w/ audio/serial, **Cat X**	L459-AE	R459-AE
Draco- Media Unit, w/o audio/serial, **multi-mode**	L459-0M	R459-0M
Draco- Media Unit, w/ audio/serial, **multi-mode**	L459-AM	R459-AM
Draco- Media Unit, no Audio/serial, **single-mode**	L459-0S	R459-0S
Draco- Media Unit, w/ Audio/serial, **single-mode**	L459-AS	R459-AS
Draco major KVM devices (with keyboard/mouse)		
For Cat X (Cat5, Cat5e, Cat6, Cat7)		
Draco- KVM Unit, Single-Head	L459-0ES	R459-0ES
Draco- KVM Unit, Dual-Head	L459-0ED	R459-0ED
Draco- KVM Unit, audio/serial, Single-Head	L459-AES	R459-AES
Draco- KVM Unit, audio/serial, Dual-Head	L459-AED	R459-AED
For Multimode Fibers 50/125µ or 62,5/125µ		
Draco- KVM Unit, Single-Head	L459-0MS	R459-0MS
Draco- KVM Unit, Dual-Head	L459-0MD	R459-0MD
Draco- KVM Unit, audio/serial, Single-Head	L459-AMS	R459-AMS
Draco- KVM Unit, audio/serial, Dual-Head	L459-AMD	R459-AMD
For Singlemode Fibers 9/125µ		
Draco- KVM Unit, Single-Head	L459-0SS	R459-0SS
Draco- KVM Unit, Dual-Head	L459-0SD	R459-0SD
Draco- KVM Unit, audio/serial, Single-Head	L459-ASS	R459-ASS
Draco- KVM Unit, audio/serial, Dual-Head	L459-ASD	R459-ASD

IHSE GMBH, MAYBACHSTR. 11, 88094 OBERTEURINGEN/GERMANY, PHONE +49 (0)7546-9248-0, FAX +49 (0)7546-9248-48, EMAIL@IHSE.DE
HRB 580617 AMTSGERICHT FREIBURG, UST.-ID-NR.: 146965085, GESCHÄFTSFÜHRER: HEINER ESSELN, DR. ENNO LITTMANN, PETER STRIEGEL